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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/086,985	02/28/2002	Ronald Willard Baker	2001-0451.00	6315

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EXAMINER	
LAZOR, MICHELLE A	

ART UNIT	PAPER NUMBER
1734	

DATE MAILED: 04/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/086,985	BAKER ET AL.	
	Examiner	Art Unit	
	Michelle A Lazor	1734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-46* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/31/02 &4/18/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 – 4, 9 – 17, and 19 – 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Sanderson et al. (WO 99/64243).

Regarding Claims 1, 2, 12, and 19 – 24, Sanderson et al. disclose an ink jet printer comprising a housing; an ink jet printing apparatus located within the housing, and a coating apparatus positioned before the ink jet printing device which comprises a rotatable first roll (162); a rotatable second roll (164) positioned adjacent to the first roll and defining with the first roll a first nip through which the printing substrate passes; and a metering device comprising a supply of coating liquid (100) in contact with the second roll and a doctor blade (69) contacting the second roll, which transfers the coating liquid to the printing substrate, wherein the surface energy or surface hardness of the second roll is greater than the surface energy or surface hardness of the coating liquid (Figures 4 and 5; page 7, line 4 – page 8, line 11 and page 9, lines 1 – 12). Thus, since any coating liquid may be used, thereby complying with having a lower surface energy or lower surface hardness than the second roll, and since spreading of the coating liquid is considered to be important by Sanderson et al. (page 5, lines 17 – 20), Sanderson et al. disclose all the limitations of Claims 1, 2, 12, and 19 – 24, and anticipate the claimed invention.

Regarding Claims 3 and 11, Sanderson et al. disclose an additional rotatable third roll (66) contacting the second roll (64) and forming a second nip there between; and a doctor blade (69) in contact with the third roll, the doctor blade applying a layer of coating liquid onto the third roll, the third roll transferring the coating liquid to the second roll, and the second roll in turn transferring the coating liquid to the printing substrate, wherein the hardness of the second roll is less than the hardness of the third roll (Figure 2; page 3, line 31 – page 4, line 10 and page 5, lines 1 – 30). Thus Sanderson et al. disclose all the limitations of Claims 3 and 11, and anticipate the claimed invention.

Regarding Claim 4, Sanderson et al. disclose the second roll comprising cast urethane (page 5, lines 26 – 30). Thus Sanderson et al. disclose all the limitations of Claim 4, and anticipate the claimed invention.

Regarding Claims 9 and 10, Sanderson et al. disclose the second roll formed from a material having a sufficiently low hardness to permit the selected roll to conform to the other roll and to ensure contact between the second roll and the third roll along substantially the entire first or second nip (page 5, lines 15 – 24). Thus Sanderson et al. disclose all the limitations of Claims 9 and 10, and anticipate the claimed invention.

Regarding Claims 13 – 15, Sanderson et al. disclose the second roll to have a surface roughness of 0.3 micrometers R_a (page 5, lines 29 – 30), the doctor blade contacting the third roll and orented at a contact angle relative to the third roll, the doctor blade having a longitudinal edge that contacts the third roll with a contact force so that a substantially uniform quantity of coating liquid is received by the third roll as the third roll is caused to rotate, wherein the contact force is sufficient to ensure that the doctor blade remains in contact with the third roll as the third

roll is caused to rotate (Figures 1 and 2). Thus Sanderson et al. disclose all the limitations of Claims 13 – 15, and anticipate the claimed invention.

Regarding Claims 16 and 17, Sanderson et al. disclose the third roll to have a roughness between 1 and 4 micrometers R_a (page 4, lines 1 – 10), and the contact angle is considered between 20 and 30 degrees (Figures 1 and 2). Thus Sanderson et al. disclose all the limitations of Claims 16 and 17, and anticipate the claimed invention.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 25, 28 – 31, 36, and 39 – 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sanderson et al.

Regarding Claims 25, 28, and 36, Sanderson et al. disclose a metering device comprising an additional rotatable third roll (66) contacting the second roll (64) and forming a second nip there between; a supply of coating liquid having a surface energy; and a doctor blade (69) in contact with the third roll, the doctor blade applying a layer of coating liquid onto the third roll, the third roll transferring the coating liquid to the second roll, and the second roll in turn transferring the coating liquid to the printing substrate (Figure 2; page 3, line 31 – page 4, line 10 and page 5, lines 1 – 30. Although there is no specific disclosure of the surface energy of the coating liquid, the reference does disclose using a roll having a surface energy which allows the liquid coating material to sufficiently spread out on its outer surface to form a substantially

uniform layer of coating material (page 5, lines 17 – 20). One reading this would therefore know to also design any material which contacts the liquid to have a sufficiently low surface energy to allow the liquid coating material to adequately spread out. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to design the surface energy of the third roll and at least the distal edge of the doctor blade to be less than the surface energy of the coating liquid in order to sufficiently spread the liquid to form a substantially uniform layer of coating material (page 5, lines 15 – 30).

Regarding Claims 28 – 31 and 39 – 42, Sanderson et al. disclose the third roll to be substantially cylindrical, comprising a surface, a first end, an opposite second end and a longitudinal length between the first and second ends, and defines with the second roll a second nip, wherein the doctor blade further comprises a first end and an opposite second end, and wherein the distal edge of the doctor blade extends between the first and second ends of the doctor blade and has a longitudinal length, wherein the surface energy of substantially the entire length of the distal edge of the doctor blade is less than the surface energy of the coating liquid (Figures 1 and 2). Again, although there is no specific disclosure of the surface energy of the coating liquid, the reference does disclose using a roll having a surface energy which allows the liquid coating material to sufficiently spread out on its outer surface to form a substantially uniform layer of coating material (page 5, lines 17 – 20). One reading this would therefore know to also design any material which contacts the liquid to have a sufficiently low surface energy to allow the liquid coating material to adequately spread out. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to design the surface energy of the third roll and at least the distal edge of the doctor blade to be less than the surface energy

of the coating liquid in order to sufficiently spread the liquid to form a substantially uniform layer of coating material (page 5, lines 15 – 30).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sanderson et al. as applied in Claim 1 above, in view of Chiang et al. (U.S. Patent No. 6451438).

Sanderson et al. disclose all the limitations of Claim 1, but do not disclose the second roll to comprise urethane and a silicone polyol. However, Chiang et al. disclose a roll which comprises urethane and a silicone polyol (Abstract). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use a urethane and a silicone polyol to provide a low tacky, conductive, sort roller for use in a printer (Abstact).

5. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sanderson et al. as applied in Claim 1 above, in view of Masuda et al. (U.S. Patent No. 5475473).

Sanderson et al. disclose all the limitations of Claim 1, but do not disclose the second roll to comprise urethane and a silicone polyol between about 2 and about 7 parts per hundred rubber of a silicone polyol. However, Masuda et al. disclose a roll which comprises urethane and a silicone polyol between about 2 and about 7 parts per hundred rubber of a silicone polyol (column 5, line 63 – column 6, line 6). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use a urethane and a silicone polyol between about 2 and about 7 parts per hundred rubber of a silicone polyol to provide intimate contact between the drum and the substrate (column 5, lines 63 – 65).

6. Claims 7, 8, 26, 27, 37, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sanderson et al. as applied in Claims 1, 25, and 36 above, in view of Till et al. (U.S. Patent No. 6006059).

Sanderson et al. disclose all the limitations of Claims 1, 25, and 36, but do not disclose the surface energy of the second roll to be between 35 and 40 dyne/cm as well as the surface energy of the coating liquid to be between 30 and 35 dyne/cm. However, Till et al. disclose the surface energy of the second roll to be between 35 and 40 dyne/cm (column 6, lines 40 – 57). Since any coating material may be used, the surface energy of the coating liquid to be between 30 and 35 dyne/cm would be known to one of ordinary skill in the art. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have the surface energy of the second roll to be between 35 and 40 dyne/cm since it is well known in the art to use rolls having surface energies as claimed.

7. Claims 18, 32, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sanderson et al.

Regarding Claim 18, although there is no specific disclosure as to the contact force to be between 0.4 and about 0.5 N/cm, it is considered obvious the contact force could be controlled to between 0.4 and about 0.5 N/cm since Sanderson et al. implies the load of the blade to change against the roll (page 5, lines 9 – 14).

Regarding Claims 32 and 43, although there is no specific disclosure as to the design of the doctor blade, one of ordinary skill in the art would know how to appropriately design the doctor blade.

8. Claims 33 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sanderson et al. as applied in Claim 25 above, in view of Hanson et al. (U.S. Patent No. 4909182).

Sanderson et al. disclose all the limitations of Claim 25, but do not disclose a coating of silicone wax on the distal edge of the doctor blade having a surface energy that is less than the surface energy of the coating liquid. However, Hanson et al. disclose using silicone on a doctor blade (column 6, lines 17 – 35). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use silicone to improve cooperation between the transfer roll and the blade (column 6, lines 17 – 19).

9. Claims 34 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sanderson et al. as applied in Claim 25 above, in view of Okuda et al. (U.S. Patent No. 5671675).

Sanderson et al. disclose all the limitations of Claim 25, but do not disclose a coating of fluorocarbon on the distal edge of the doctor blade having a surface energy that is less than the surface energy of the coating liquid. However, Okuda et al. disclose using fluorocarbon on a doctor blade (column 5, lines 43 – 52). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use fluorocarbon to decrease the friction coefficient with the contact roller (column 5, lines 49 – 50).

10. Claims 35 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sanderson et al. as applied in Claim 25 above, in view of Illman et al. (U.S. Patent No. 3990132).

Sanderson et al. disclose all the limitations of Claim 25, but do not disclose a coating of Teflon on the distal edge of the doctor blade having a surface energy that is less than the surface energy of the coating liquid. However, Illman et al. disclose using Teflon on a doctor blade (column 7, lines 1 – 3). Therefore it would have been obvious to one of ordinary skill in the art at the time

of the invention to use Teflon to decrease adhesion between the doctor blade and the coating material.

Response to Arguments

11. In response to applicant's argument that there was no reason given why it would be necessary in Meade to have the surface energy/surface hardness of the second roll greater than the surface energy/surface hardness of the coating liquid, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). Claim 1 does not directly claim a supply of coating liquid, rather a metering device capable of applying a layer of coating liquid. Therefore claims 1 and 22 are anticipated by Meade.

Considering claims 2 and 24, which include the liquid with the apparatus, the claims are still considered to be anticipated by Meade since Meade clearly states "the second roll is formed from a material having a surface energy which allows the liquid coating material to sufficiently spread out on its outer surface...and a sufficiently low hardness so that the second roll is capable of conforming to a substantial number of valleys in the substrate..." (page 5, lines 17 – 23), implying the surface energy/surface hardness of the roll is greater than the surface energy/surface hardness of the coating liquid.

12. Regarding the arguments presented concerning claim 11, Examiner disagrees. The third roll is said to be made from the same material as the first roll, which is made of aluminum (page 3, line 31 – page 4, line 10), while the second roll is made from a polyurethane, such as a polycaprolactone urethane prepolymer (page 5, lines 26 – 29), considered to be a softer material than aluminum. In any event, the material hardness of the second roll may be varied (page 5, lines 24 – 26), thereby allowing for the second roll to have a hardness which is less than the third roll.

13. Regarding Claims 25 and 36, Examiner agrees with the Applicant's arguments. However, Examiner believes the claims can still be considered obvious for the reasons stated above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michelle A Lazor whose telephone number is 571-272-1232. The examiner can normally be reached on Mon - Wed 6:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MAL
3/29/04

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